

Abstract of the Disclosure:

A method of producing a reflection type mask blank by forming, on a substrate, at least a multilayer reflection film for reflecting exposure light and an absorber layer formed on the multilayer reflection film for absorbing the exposure light is characterized in that, in order to avoid mixing at an interface between respective layers forming the multilayer reflection film due to thermal factors after deposition of the multilayer reflection film, the substrate with the multilayer reflection film is subjected to heat treatment during deposition and/or after deposition of the multilayer reflection film so as to suppress the progress of the mixing at the interface between the respective layers.